IN THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application.

1. (currently amended) A method for determining a characteristic kinetic quantity of a chemical reaction in a sample involving a plurality of chemical species, at least one of said species including at least one fluorophore, the method comprising the steps of:

generating, by impinging light on said sample, a non-equilibrium state of said chemical reaction, and

observing, by means of a fluorescence signal of at least one fluorophore, at least one portion of a relaxation of concentrations of said species involved,

~~the method~~

wherein at least one product of said chemical reaction under test comprises a combination of two species each of which including one partner of a FRET pair consisting of a FRET donor and a FRET acceptor

wherein said FRET acceptor is a photochrome, the absorption spectrum of which being changeable by irradiation with light of a suitable wavelength;

wherein said FRET donor is a fluorophore, the emission spectrum of which having an overlap region with said FRET acceptor's absorption spectrum, the size of said overlap region being dependent on the photochromic state of said FRET acceptor; and

wherein said light used for generating said non-equilibrium state has a wavelength capable of switching said photochromic state of said FRET acceptor.

2. (previously presented) A method according to claim 1, wherein the fluorescence of said FRET donor is measured in order to observe said relaxation.

3. (previously presented) A method according to claim 1, wherein said photochromic FRET acceptor is a fluorophore and wherein the fluorescence of said photochromic FRET acceptor is measured in order to observe said relaxation.

4. (previously presented) A method according to claim 1, wherein the product under test comprises an additional fluorophore which represents an additional FRET acceptor to said FRET donor.

5. (previously presented) A method according to claim 4, wherein said additional FRET acceptor is no photochrome.

6. (previously presented) A method according to claim 4, wherein the fluorescence of said additional FRET acceptor is measured in order to observe said relaxation.

7. (previously presented) A method according to claim 1, wherein a change in the photochromic state of said FRET acceptor in a first direction is caused by irradiation of said sample with light of a first wavelength and wherein a change in the photochromic state of said FRET acceptor in a second direction is caused by irradiation of said sample with light of a second wavelength.

8. (previously presented) A method according to claim 1, wherein said change in said photochromic state of said FRET acceptor in at least one direction is caused by irradiation with ultraviolet light.

9. (previously presented) A method according to claim 1, wherein said change in said

photochromic state of said FRET acceptor in at least one direction is caused by irradiation with visible light.

10. (previously presented) A method according to claim 1, wherein said excitation of said FRET acceptor is caused by irradiation with visible light.

11. (previously presented) A method according to claim 1, wherein the intensity of irradiation used to change said photochromic state of said FRET acceptor is substantially stronger than the intensity of irradiation used to generate the observed fluorescence.

12. (previously presented) A method according to claim 1, wherein said sample is irradiated in a temporally modulated fashion in order to change said photochromic state of said FRET acceptor.

13. (previously presented) A method according claim 7, wherein said sample is irradiated with light of said first wavelength and said second wavelength in an alternating fashion in order to change said photochromic state of said FRET acceptor.

14-16. (canceled)